SERVICE MANUAL

FISHER

RS-110L

LW/MW/FM
Stereo Receiver
(EUROPE)

The first name in high fidelity

CONTENTS

SPECIFICATIONS

FM SECTION

Tuning Range	87.5 – 108 MHz
DIN Sensitivity (75 ohms)	
Mono	1.5 μV
Stereo	3.5 μV
IHF Sensitivity (300 ohms)	
Mono	3.0 μV
Stereo	7.0 μV
Stereo Trigger Sensitivity	8.0 μV
Muting Threshold	8.0 μV
S/N Ratio (DIN)	
Mono	65 dB
Stereo	60 dB
Selectivity (DIN)	70 dB
Capture Ratio	1.0 dB
AM Suppression	60 dB
Spurious Rejection	75 dB
IF Rejection	80 dB
Image Rejection	50 dB
Sub-Carrier Suppression (19/38 kHz)	65/75 dB
THD (1 kHz)	
Mono	0.2 %
Stereo	0.5 %
Frequency Response (20 Hz – 15 kHz)	–2.0 dB
Stereo Separation (1 kHz)	40 dB

MW SECTION

Tuning Range	520 – 1610 kHz
Sensitivity	300 μV/m
S/N Ratio	55 dB
Image Rejection	40 dB
Selectivity (±10 kHz)	40 dB
THD (30 % Mod.)	0.5 %
Spurious Rejection	60 dB
IF Rejection	40 dB

LW SECTION

Tuning Range	145 – 355 kHz
Sensitivity	700 μV/m
S/N Ratio	55 dB
Image Rejection	40 dB
Selectivity (±10 kHz)	40 dB
THD (30 % Mod.)	0.5 %
Spurious Rejection	60 dB
IF Rejection	40 dB

AMPLIFIER SECTION

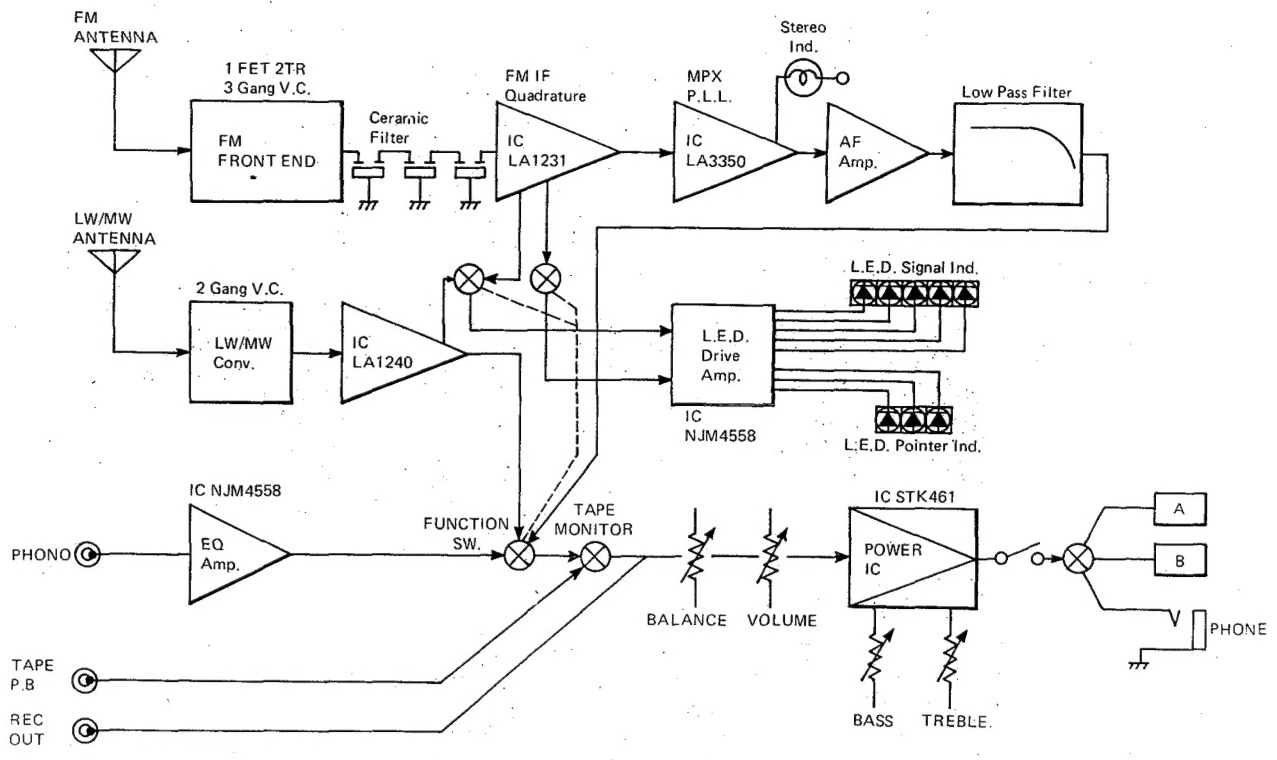
Sine Wave Power	
at 1000 Hz (8 ohms)	2 x 23 W
40 to 20,000 (8 ohms)	2 x 20 W
Music Power (8 ohms)	2 x 26 W
THD (Rated Output, 8 ohms)	0.1 %
IM (Rated Output, 8 ohms)	0.1 %
Damping Factor (8 ohms)	>20
Frequency Response (20 Hz – 20 kHz)	±0.5 dB
Input Sensitivity and Impedance	
Phono	2.5 mV/50 kohms
Tape	150 mV/50 kohms
Tuner	150 mV/50 kohms
S/N Ratio (DIN)	
Phono	60 dB
Tape/Tuner	90 dB
Treble Control (10 kHz)	±10 dB
Bass Control (100 Hz)	±10 dB
Loudness Control (100 Hz/10 kHz)	+8 dB/+4 dB

GENERAL

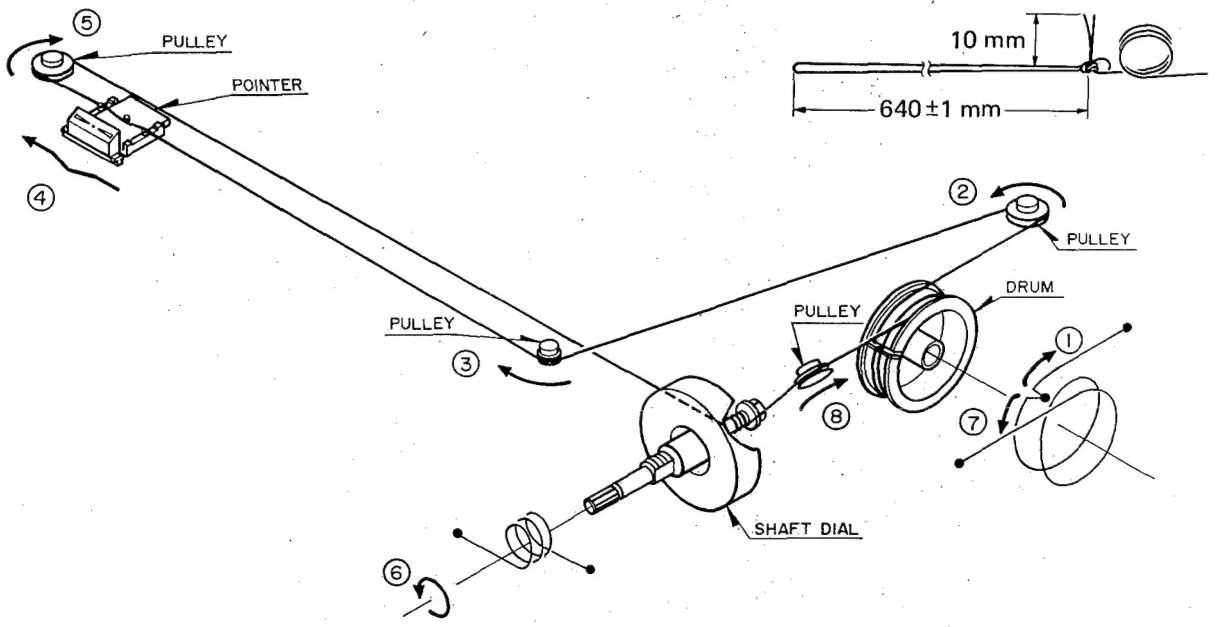
Power Requirements	AC 110/220 V, 50 Hz
Power Consumption	120 W
Dimensions (W x D x H)	400 x 300 x 125 mm
Weight (approx.)	6.9 kg

*** Specifications are subject to change without notice.**

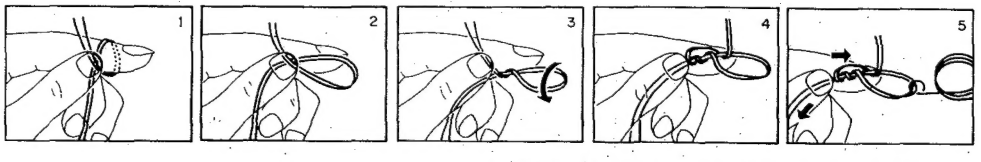
FUNCTIONAL BLOCK DIAGRAM



DIAL CORD STRINGING



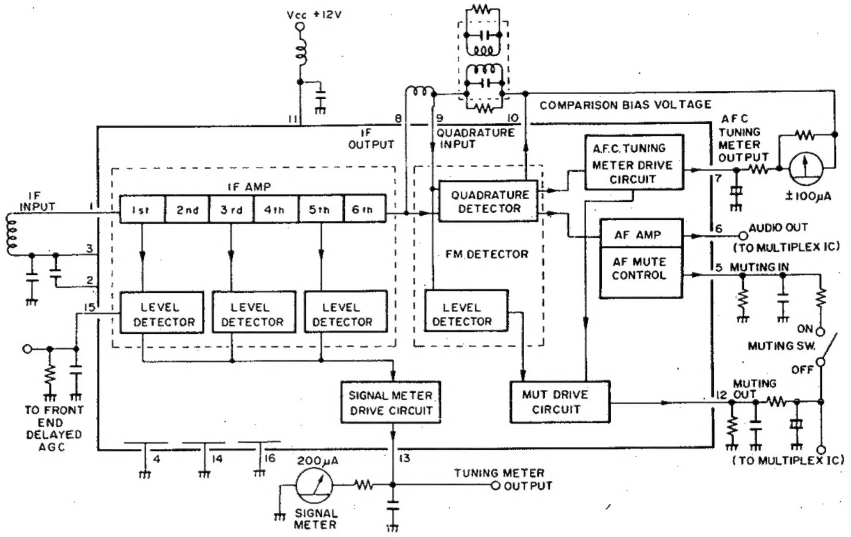
CORD KNOTTING



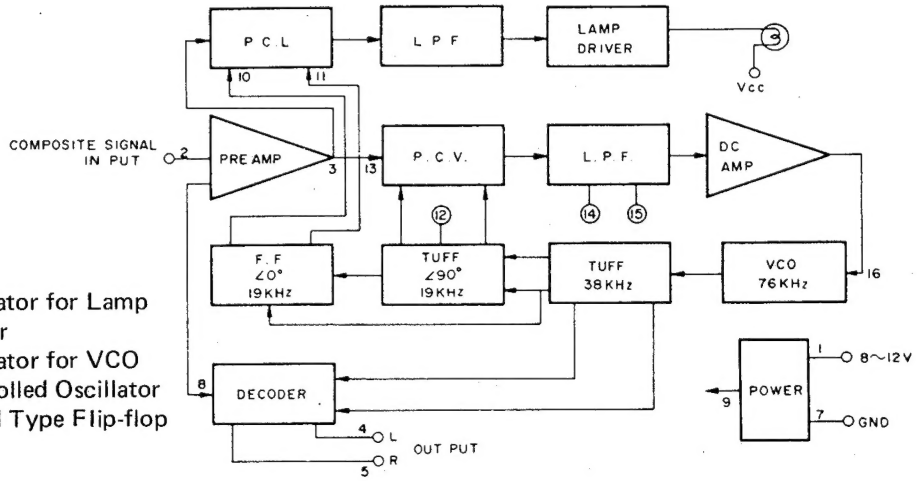
NOTE: Check to see that the dial cord is correctly strung by turning the dial.

IC EQUIVALENT CIRCUIT & BLOCK DIAGRAM

FM IF IC LA1231

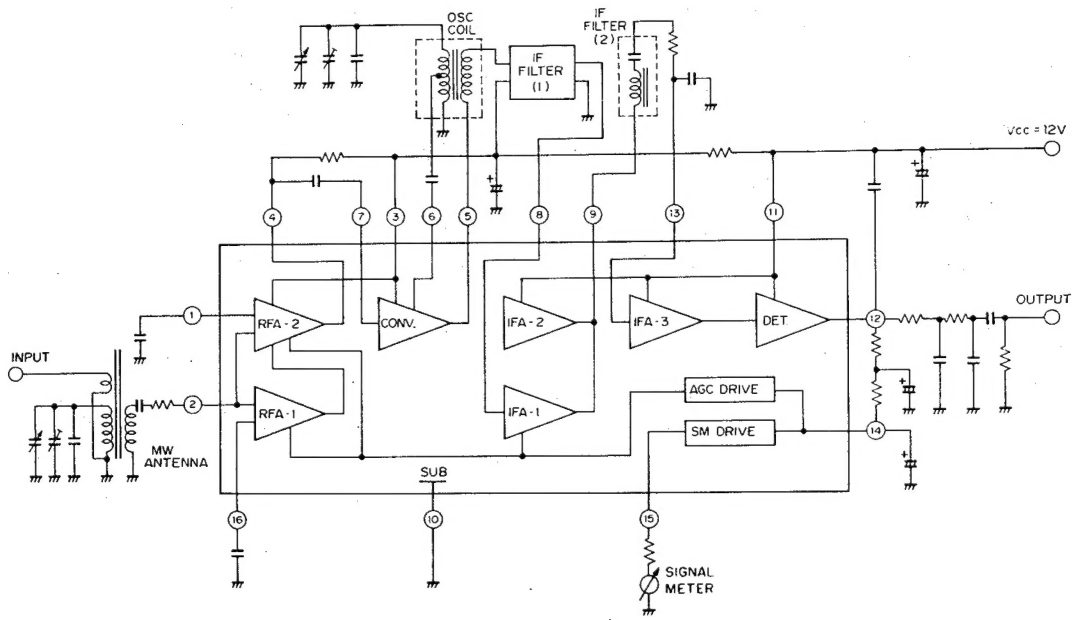


FM MPX IC LA3350



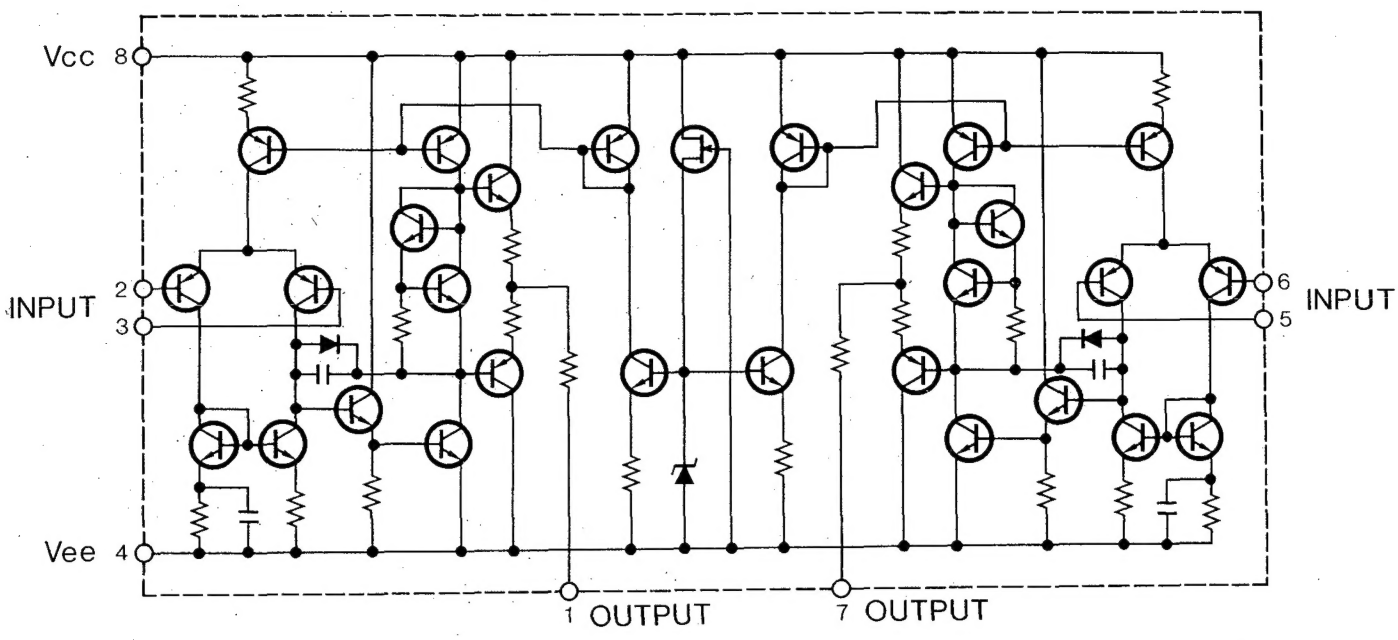
P. C. L. : Phase Comparator for Lamp
L. P. F. : Low Pass Filter
P. C. V. : Phase Comparator for VCO
V C O : Voltage Controlled Oscillator
TUFF : Direct coupled Type Flip-flop

AM RF IF IC LA1240

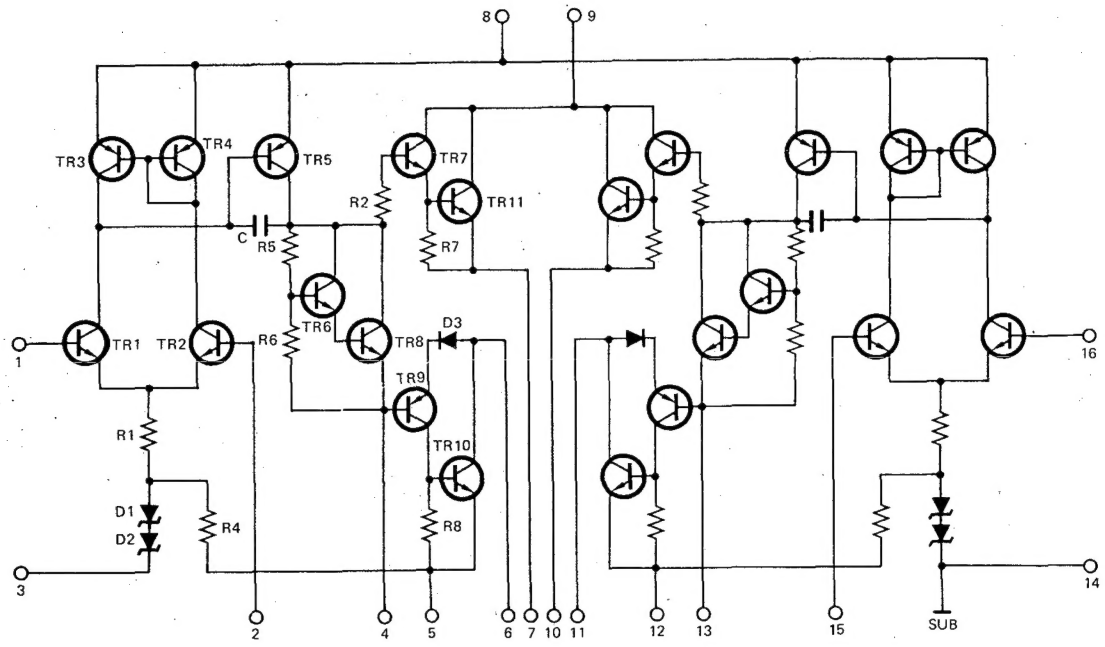


IC EQUIVALENT CIRCUIT & BLOCK DIAGRAM (Continued)

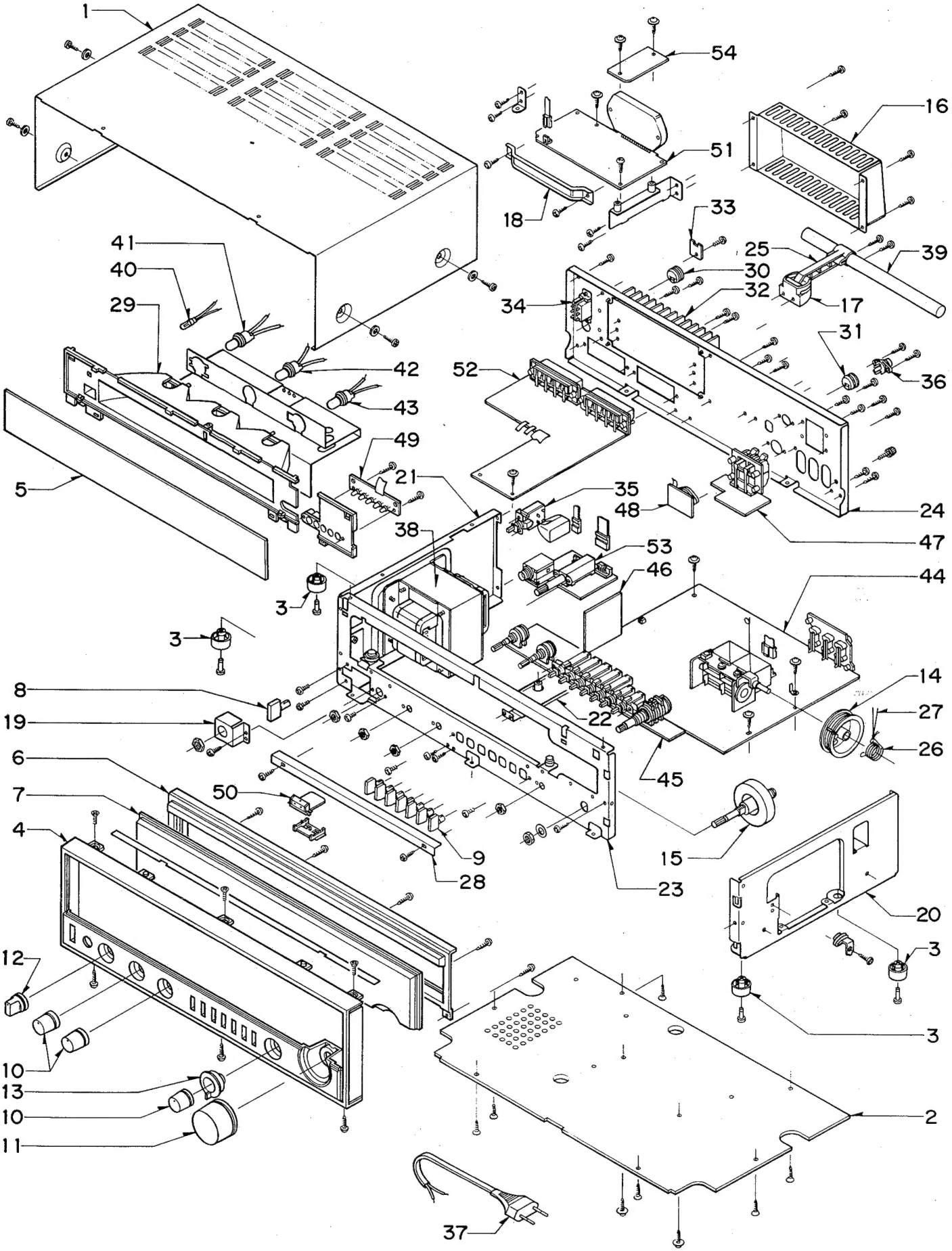
AF AMP IC NJM4558



POWER AMP IC STK-461



EXPLODED VIEW OF CABINET AND CHASSIS



PARTS LIST

PACKING PARTS LIST

Ref. No.	Parts Number	Description
	131 6 1139 88100	Box Corrugate-EXP
	131 6 2119 02091	Bag Polyethylene-EXP
	131 6 3009 31521	Pad (Right)
	131 6 3009 31522	Pad (Left)

ACCESSORIES PARTS LIST

Ref. No.	Parts Number	Description
	4 2442 00030	Antenna FM
	131 6 2719 10801	Bag Fan
	131 6 4119 86300	Explanatory Booklet
	131 6 4519 15700	Guarantee Certificate

CABINET PARTS LIST

Ref. No.	Parts Number	Description
1	131 2 1410 24900	Cover
2	131 2 1105 26600	Plate Bottom
3	131 2 1801 14600	Leg

APPEARANCE PARTS LIST

Ref. No.	Parts Number	Description
4	131 0 1016 37800	Panel Decorate Assy
5	131 2 1201 35901	Plate Dial
6	131 2 1116 19103	Frame
7	131 2 1205 24900	Decorate Plate Dial
8	131 2 1601 64500	Knob (Power SW.)
9	131 2 1601 64600	Knob (Push SW.)
10	131 2 1601 64700	Knob (Volume)
11	131 2 1601 66400	Knob (Tuning)
12	131 2 1601 67500	Knob (Speaker SW.)
13	131 2 1601 67600	Knob (Balance)

CHASSIS PARTS LIST

Ref. No.		Parts Number	Description
14		131 0 3002 11300	Drum Assy
15		131 0 3003 22400	Shaft Dial Assy
16		131 2 1410 25400	Cover
17		131 2 2207 10500	Support Arm (Antenna)
18	*	131 2 3101 71300	Metal Mount (IC)
19	*	131 2 3101 72000	Metal Mount (Phone)
20	*	131 2 3101 74400	Metal Mount (Right Side Panel)
21	*	131 2 3101 74500	Metal Mount (Left Side Panel)
22	*	131 2 3101 74600	Metal Mount
23	*	131 2 3305 30600	Panel Front
24	*	131 2 3306 32702	Panel Rear
25		131 2 3602 12101	Holder Antenna
26		131 2 4111 00400	Spring Rope
27		131 2 4112 10400	Rope 0.5
28		131 2 4120 13100	Slide Rail Pointer
29		131 2 6110 29301	Shelter Light

CHASSIS PARTS LIST

Ref. No.		Parts Number	Description
30		131 2 6111 14200	Bushing (AC Cord)
31		131 2 6111 14801	Bushing (Ant. Lead)
32		131 2 6201 29200	Plate Heat Sink
33		131 2 7104 00500	Plate Pad Switch

ELECTRICAL PARTS LIST

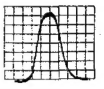
Ref. No.		Parts Number	Description
34		4 2312 01020	Switch Slide
35		4 2312 04520	Switch Push Power
36		4 2352 00110	Socket 1P
37		4 2432 00140	Power Cord
38		4 2512 14920	Power Transformer
39		4 2579 25110	Bar Antenna AM
40		4 6122 00440	Pilot Lamp (6 V, 30 mA)
41		4 6129 20771	Pilot Lamp (8 V, 300 mA)
42		4 6129 20776	Pilot Lamp (8 V, 300 mA)
43		4 6129 20777	Pilot Lamp (8 V, 300 mA)
44	*	131 0 4001 06082	RF IF MPX P.C.B. Assy
45	*	131 0 4001 06590	Volume P.C.B. Assy
46	*	131 0 4001 06580	Muting P.C.B. Assy
47	*	131 0 4001 06120	Antenna P.C.B. Assy
48	*	131 0 4001 06130	DIN P.C.B. Assy
49	*	131 0 4001 06600	L.E.D. Signal P.C.B. Assy
50	*	131 0 4001 05501	L.E.D. Pointer P.C.B. Assy
51	*	131 0 4001 06160	Power Amp P.C.B. Assy
52	*	131 0 4001 06171	Power Supply P.C.B. Assy
53	*	131 0 4001 06570	Speaker Selector P.C.B. Assy
54	*	131 0 4001 06190	Fuse P.C.B. Assy
C01		4 2232 00550	Oil 0.01 μF 450V

*—Not a service part.

AM-FM MULTIPLEX ALIGNMENT

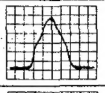
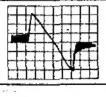
AM ALIGNMENT

For alignment: Maintain generator output as low as possible for suitable indication.

Step	Adjusting circuit	Connection		Position of Tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output			
1	IF	Connect 455 kHz sweep generator to VC4.	Connect Oscilloscope to Test Point TP7.	Near max. capacity of VC at position of no interference	AM IFT 2-00040	
2	MW (RF)	Connect AM generator to EXT AM antenna and GND terminals. Set to 600 kHz. Modulate with 30 %, 400 Hz.	Connect Oscilloscope and AC. V.T.V.M. to REC Output.	600 kHz	AM BAR ANT 9-25110 MW OSC 9-20851	Max.
3		Change frequency to 1400 kHz.		1400 kHz	TC 01,03	
4	LW (RF)	Change frequency to 160 kHz.		160 kHz	LW OSC 9-20860	Max.
5		Change frequency to 350 kHz.		350 kHz	TC 02, 04	
6	Repeat adjustments.					

1. Variable capacitor completely closed
2. Set the dial pointer to very left line dial scale.
3. Connect sweep generator, SG, V.T.V.M. and oscilloscope.
4. Function switch to "MW" or "LW"
5. Use a screwdriver with plastic grip for all adjustments.

FM ALIGNMENT

Step	Adjusting circuit	Connection		Position of Tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output			
1	IF	Connect sweep 10.7 MHz generator to test point VC2.	Connect Oscilloscope to Test Point TP4.	Near max. capacity of VC. at position of no interference	FM IFT 9-21360	
2	Quadrature Detector		Connect Oscilloscope to Test Point TP2.		FM QUADRATURE COIL 9-21350	
3	RF	Connect FM RF generator through two 120-ohm resistors to FM antenna screw terminals. Set generator to 90 MHz, modulate with 400 Hz to provide ±75 kHz deviation. Set generator output attenuator as low as possible.	Connect V.T.V.M. to REC Output.	90 MHz	FM ANT COIL 9-21180 FM RF COIL 9-20460 FM OSC COIL 9-20910	Max.
4		Change generator setting to 106 MHz.		106 MHz	TCA,TCR,TCO	Max.
5	Repeat adjustments.					

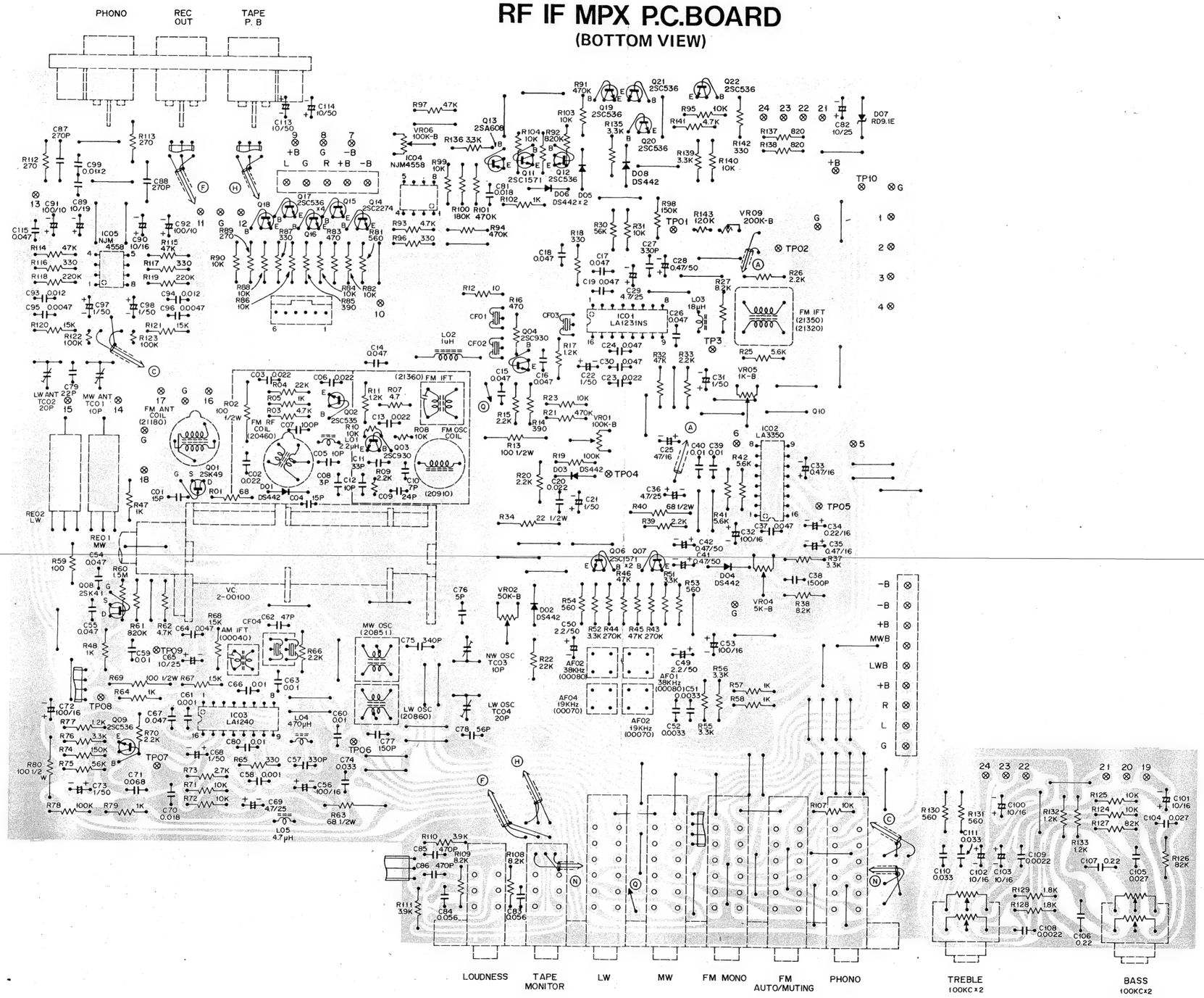
1. Variable capacitor completely closed
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, FM SG, V.T.V.M. and oscilloscope. FM ANT input impedance is 75 ohm.
4. Function switch to "FM"
5. Use a screwdriver with plastic grip for all adjustments.

FM MPX ALIGNMENT

Step	Adjusting circuit	Connection		Position of Tuning dial	Adjustment	
		Input	Output			
1	PLL IC FO (19 kHz) Adjustmnet	None	Connect Frequency counter or synchroscope to TP5	Near max. capacity of VC. at position of no interference	Adjust VR04 (5k-B) so that frequency counter or synchroscope indicates 19 kHz.	
2	FM STEREO Signal Separation	As above Steps 3,4 except modulation. Modulate LEFT channel ±67.5 kHz – 400 Hz audio and ±7.5 kHz – 19 kHz pilot carrier. As above except modulate RIGHT Channel.	Connect V.T.V.M. to REC output terminal (R Channel).		VR05 (1k-B)	V.T.V.M. Min.
			Connect V.T.V.M. to REC output terminal (L Channel).			
3	Repeat steps 1,2. Set at position with max. channel separation.					

1. Variable capacitor completely closed
2. Connect FM stereo SG and V.T.V.M.
3. Function switch to "FM"
4. Use a screwdriver with plastic grip for all adjustments.

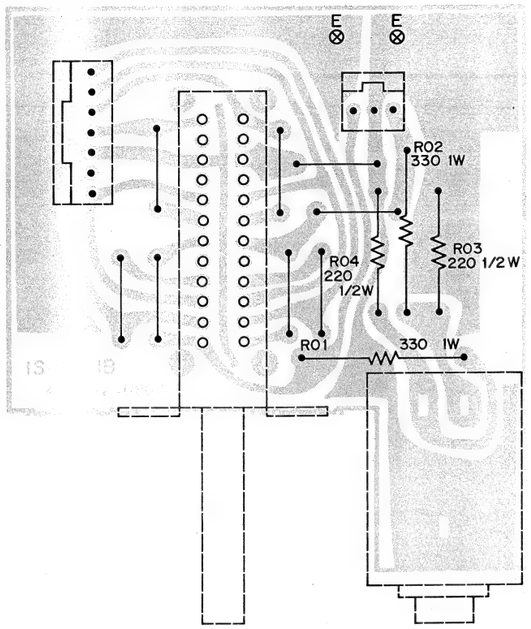
RF IF MPX P.C.BOARD
(BOTTOM VIEW)



1. **VR01 Muting Level Adjustment**
   Adjust VR01 at the aerial input of FM 75 ohm and the sensitivity of 8 μV (Muting Switch: ON) until the wave form amplitude of the REC output becomes half.
2. **VR02 Signal Indicator Adjustment**
   Adjust the attenuator of FM SSG to 60 dB and VR02 until the final L.E.D. of the Signal Indicator slightly lights up.
3. **VR06 Pointer L.E.D. Adjustment**
   Connect the DC Voltmeter to Test Point No. 10 and adjust VR06 until the voltage becomes 0±50 mV.

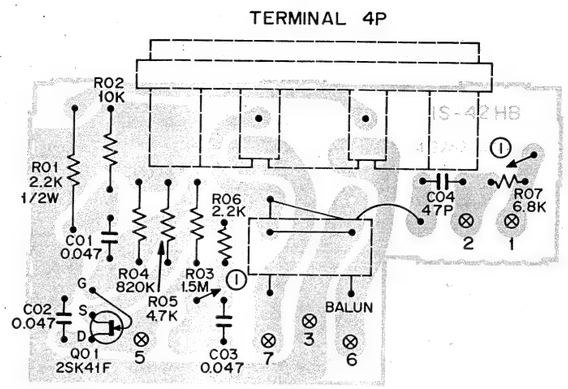
		IC PIN NUMBERS VOLTAGES															
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC01	LA1231	2.8V	2.8V	2.8V	0V	2.3V	5.7V	5.6V	5.7V	5.7V	5.7V	13.1V	4.3V	0.3V	0V	5.0V	0V
IC02	LA3350	12.5V	0V	5.6V	7.7V	7.7V	15.9V	0V	0.4V	—	2.1V	2.1V	2.2V	2.1V	2.1V	2.1V	2.9V
IC03	LA1240	4.6V	1.6V	12.0V	9.7V	12.0V	3.3V	1.3V	2.7V	8.9V	0V	12.2V	1.5V	0.6V	1.4V	0V	1.1V
IC05	NJM4558	0V	0V	0V	−15V	0V	0V	0V	15V	—	—	—	—	—	—	—	—

SPEAKER SELECTOR P.C.BOARD
(BOTTOM VIEW)



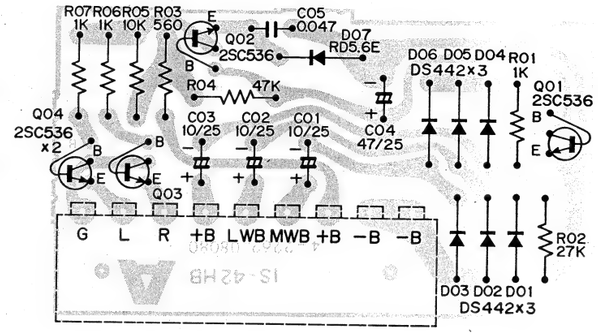
HEADPHONE

ANTENNA P.C.BOARD
(BOTTOM VIEW)

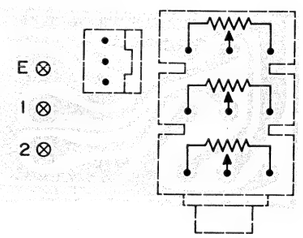


TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	G	D	S
Q01	2SK41	3.8V	11.4V	4.9V

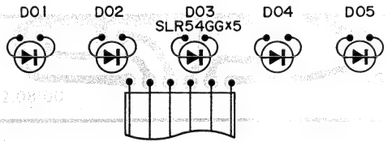
MUTING P.C.BOARD
(BOTTOM VIEW)



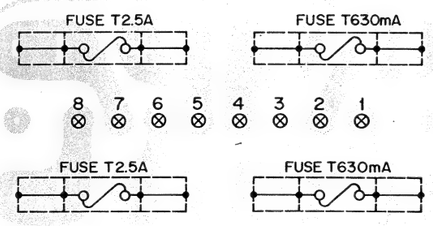
VOLUME P.C.BOARD
(BOTTOM VIEW)



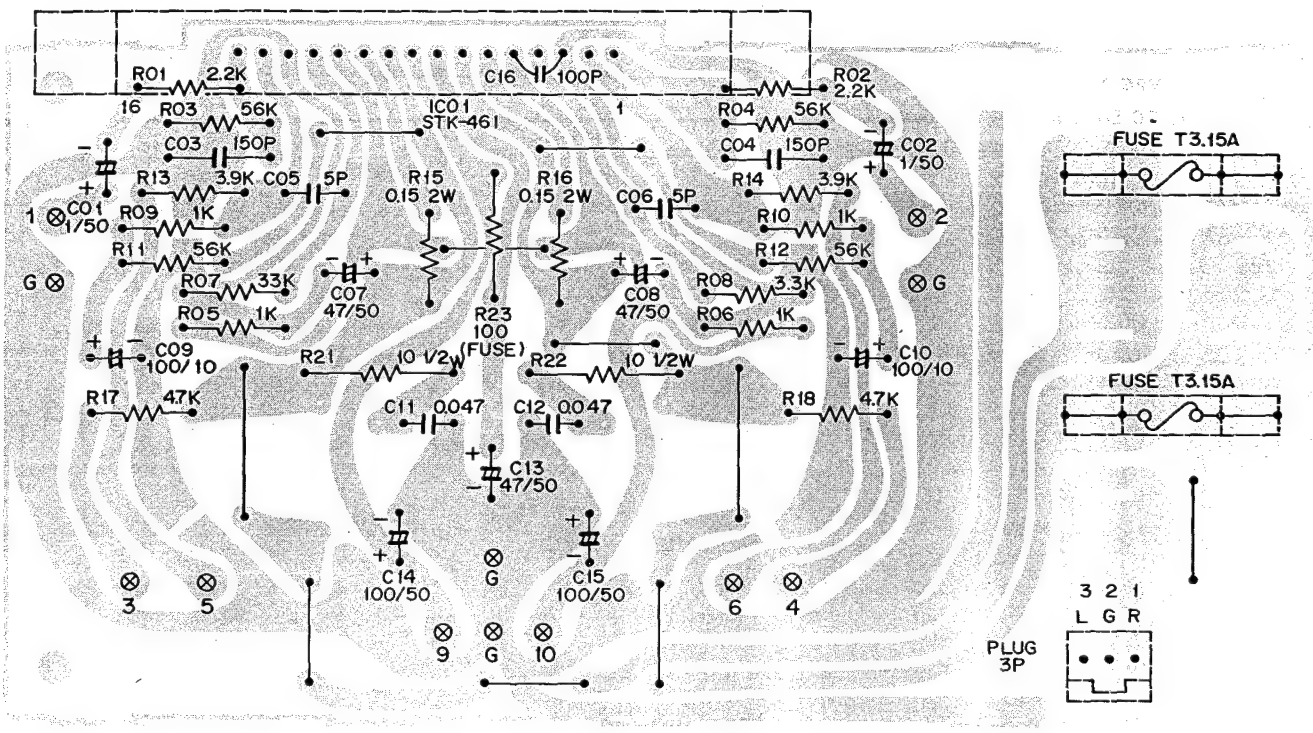
L.E.D SIGNAL P.C.BOARD
(BOTTOM VIEW)



FUSE P.C.BOARD
(BOTTOM VIEW)

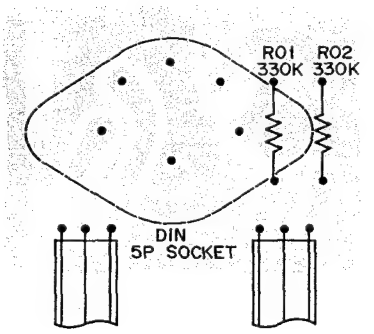


POWER AMP P.C.BOARD
(BOTTOM VIEW)

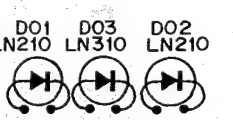


IC PIN NUMBERS VOLTAGES																	
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC01	STK461	0V	0V	0V	1.3V	−32.3V	0V	0V	30.3V	32.0V	0V	0V	−32.3V	−1.3V	0V	0V	0V

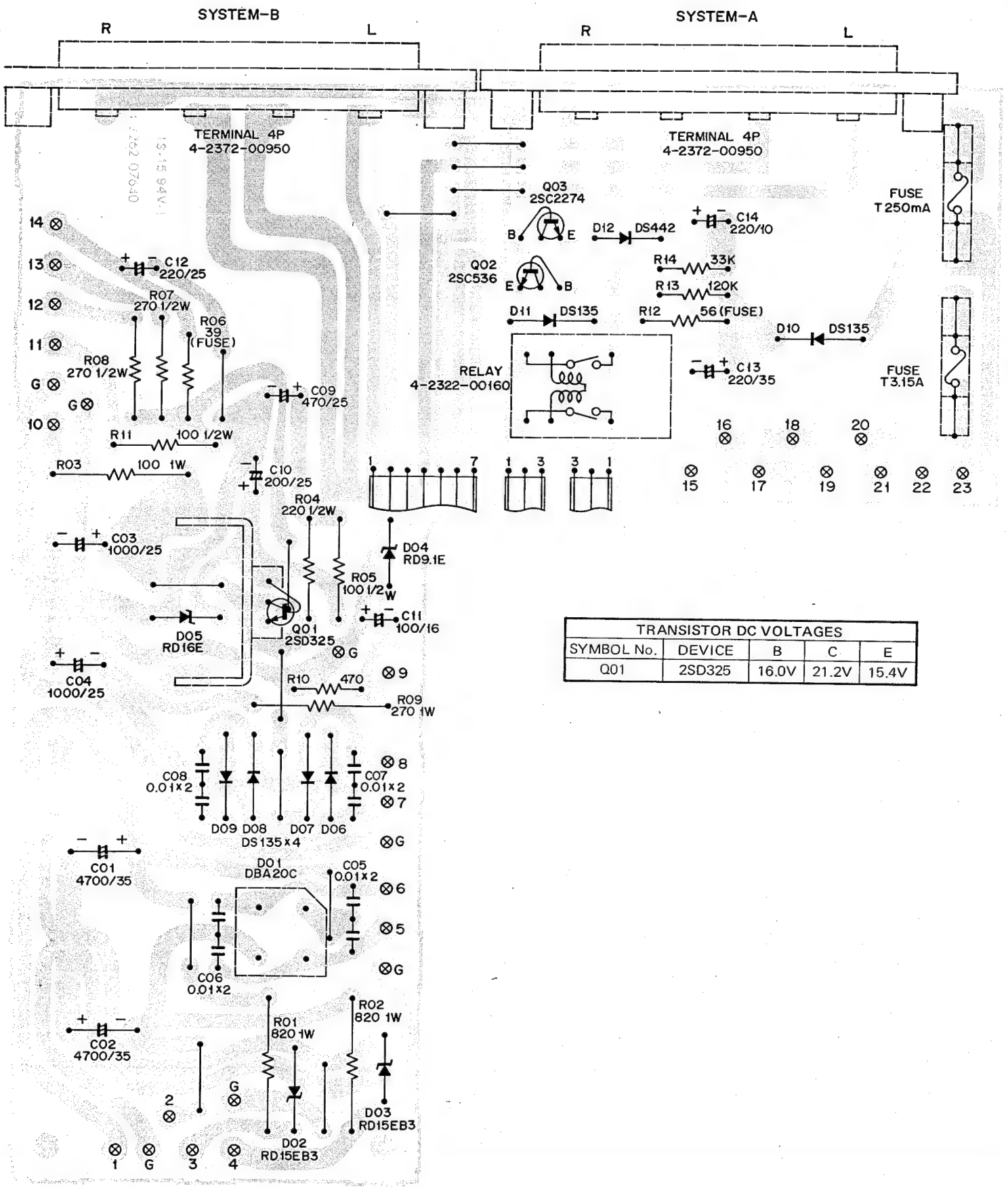
DIN P.C.BOARD
(BOTTOM VIEW)



L.E.D. POINTER P.C.BOARD
(BOTTOM VIEW)



POWER SUPPLY P.C.BOARD
(BOTTOM VIEW)



TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q01	2SD325	16.0V	21.2V	15.4V

PARTS LIST

RF IF MPX P.C.B. Assy
131 0 4001 06082

Ref. No.	Parts Number	Description
	4 2242 00100	Variable Capacitor
	4 2312 04870	Switch Push 7 key
	4 2329 20210	Relay Leed
	4 2359 23220	RCA 6P Jack
	4 2362 00370	Plug 6P
	4 2362 00530	Plug 9P
	4 2522 00070	AF Filter
	4 2522 00080	AF Filter
	4 2562 00040	IF Transformer AM
	4 2569 21350	IF Transformer FM
	4 2569 21360	IF Transformer FM
	4 2579 21180	Antenna Coil FM
	4 2589 20851	OSC Coil MW
	4 2589 20860	OSC Coil LW
	4 2582 20910	OSC Coil FM
	4 2599 20460	RF Coil FM
	131 2 6103 16400	Cover Shield
CF01,02 03	4 2272 00020	Ceramic Filter
CF04	4 2272 00030	Ceramic Filter
L01	4 2539 20420	Choke Coil 2.2 μH
L02	4 2539 20120	IF Trap
L03	4 2532 00030	Choke Coil 18 μH
L04	4 2539 20410	Choke Coil 470 μH
L05	4 2552 00140	AF Coil
TC01	4 2249 20310	Variable Capacitor (10P)
TC02	4 2249 20440	Trimmer Capacitor (20P)
TC03	4 2249 20310	Variable Capacitor (10P)
TC04	4 2249 20440	Trimmer Capacitor (20P)
VR01	4 2222 00960	VR 100k-B
VR02	4 2222 01010	VR 50k-B
VR04	4 2222 01000	VR 5k-B
VR05	4 2222 00990	VR 1k-B
VR06	4 2222 00960	VR 100k-B
VR07,08	4 2222 01650	VR 100k-Cx2 (Bass, Treble)
VR09	4 2222 00880	VR 200k-B
	CAPACITORS	
C01	C1HCYK150APA	Ceramic 15 pF 50V ±10%
C02,03	C1HYYZ223APA	Ceramic 0.022 μF 50V +80,–20%
C04	C1HCDJ150SL	Ceramic 15 pF 50V ±5%
C05	C1HCYD100APA	Ceramic 10 pF 50V ±0.5%
C06	C1HYYZ223APA	Ceramic 0.022 μF 50V +80,–20%
C07	C1HCYK101APA	Ceramic 100 pF 50V ±10%
C08	C1HCYC030APA	Ceramic 3 pF 50V ±0.25%
C09	C1HCDK240PH	Ceramic 24 pF 50V ±5%
C10	C1HCDD070CH	Ceramic 7 pF 50V ±0.5%
C11	C1HCDK330CH	Ceramic 33 pF 50V ±10%
C12	C1HCDD100CH	Ceramic 10 pF 50V ±0.5%
C13	C1HYYZ223APA	Ceramic 0.022 μF 50V +80,–20%
C14,15 16,17,18,19	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
C20	C1HYYZ223APA	Ceramic 0.022 μF 50V +80,–20%
C21,22	C1HRY-105APA	Electrolytic 1 μF 50V
C23	C1HYYZ223APA	Ceramic 0.022 μF 50V +80,–20%
C24	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
C25	C1CRY-476APA	Electrolytic 47 μF 16V
C26	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
C27	C1HCDK331SL	Ceramic 330 pF 50V ±10%
C28	C1HRY-474APA	Electrolytic 0.47 μF 50V
C29	C1ERY-475APA	Electrolytic 4.7 μF 25V
C30	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
C31	C1HRY-105APA	Electrolytic 1 μF 50V
C32	C1CRY-107APA	Electrolytic 100 μF 16V
C33	C1CUEX474A	Sint. Alu. 0.47 μF 16V +40,–20%
C34	C1CUEX224A	Sint. Alu. 0.22 μF 16V +40,–20%
C35	C1CUEX474A	Sint. Alu. 0.47 μF 16V +40,–20%
C36	C1ERY-475APA	Electrolytic 4.7 μF 25V
C37	C1HFYK473APA	Mylar 0.047 μF 50V ±10%
C38	C1HSEJ152A	Styrol 1500 pF 50V ±5%
C39,40	C1HFYK103APA	Mylar 0.01 μF 50V ±10%
C41,42	C1HRY-474APA	Electrolytic 0.47 μF 50V
C49,50	C1HRY-225LPA	Electrolytic 2.2 μF 50V
C51,52	C1HFYK332APA	Mylar 0.0033 μF 50V ±10%
C53	C1CRY-107APA	Electrolytic 100 μF 16V
C54,55	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
C56	C1CRY-107APA	Electrolytic 100 μF 16V
C57	C1HCYK331APA	Ceramic 330 pF 50V ±10%
C58	C1HYYZ102APA	Ceramic 0.001 μF 50V +80,–20%
C59,60	C1HFYK103APA	Mylar 0.01 μF 50V ±10%
C61	C1HYYZ102APA	Ceramic 0.001 μF 50V +80,–20%
C62	C1HCYK470APA	Ceramic 47 pF 50V ±10%
C63	C1HFYK103APA	Mylar 0.01 μF 50V ±10%
C64	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
C65	C1ERY-106APA	Electrolytic 10 μF 25V
C66	C1HFYK103APA	Mylar 0.01 μF 50V ±10%
C67	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
C68	C1HRY-105APA	Electrolytic 1 μF 50V
C69	C1ERY-475APA	Electrolytic 4.7 μF 25V
C70	C1HFYK183APA	Mylar 0.018 μF 50V ±10%
C71	C1HFYK683APA	Mylar 0.068 μF 50V ±10%
C72	C1CRY-107APA	Electrolytic 100 μF 16V
C73	C1HRY-105APA	Electrolytic 1 μF 50V
C74	C1HFYK333APA	Mylar 0.033 μF 50V ±10%
C75	C1HSEJ341A	Styrol 340 pF 50V ±5%
C76	C1HCYC050APA	Ceramic 5 pF 50V ±0.25%
C77	C1HSEJ151A	Styrol 150 pF 50V ±5%
C78	C1HCYK560APA	Ceramic 56 pF 50V ±10%
C79	C1HCYK220APA	Ceramic 22 pF 50V ±10%
C80	C1HFYK103APA	Mylar 0.01 μF 50V ±10%
C81	C1HFYK183APA	Mylar 0.018 μF 50V ±10%
C82	C1ERY-106APA	Electrolytic 10 μF 25V
C83,84	C1HFRK563A	Mylar 0.056 μF 50V ±10%
C85,86	C1HCYK471APA	Ceramic 470 pF 50V ±10%
C87,88	C1HCZK271BPA	Ceramic 270 pF 50V ±10%
C89,90	C1CRY-106LPA	Electrolytic 10 μF 16V
C91,92	C1ARY-107APA	Electrolytic 100 μF 10V
C93,94	C1HFYK123APA	Mylar 0.012 μF 50V ±10%
C95,96	C1HFYK472APA	Mylar 0.0047 μF 50V ±10%
C97,98	C1HRY-105APA	Electrolytic 1 μF 50V
C99	4 2232 00430	Ceramic 0.01 μFx2 250V
C100,101 102,103	C1CRY-106APA	Electrolytic 10 μF 16V
C104,105	C1HFYK273APA	Mylar 0.027 μF 50V ±10%
C106,107	C1HFRJ224ML	Mylar 0.22 μF 50V ±5%
C108,109	C1HFYK222APA	Mylar 0.0022 μF 50V ±10%
C110,111	C1HFYK333APA	Mylar 0.033 μF 50V ±10%
C113,114	C1HRY-106APA	Electrolytic 10 μF 50V
C115	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%

PARTS LIST (Continued)

Ref. No.	Parts Number	Description
	SEMICONDUCTORS	
D01,02 03,04 05,06,08	205 5 9040 44210	Diode, DS-442
D07	DNN-RD9R1EB	Diode, RD9.1EB
IC01	206 5 0161 23151	IC, LA1231NS
IC02	206 5 0743 35012	IC, LA3350B
IC03	206 5 0171 24010	IC, LA1240
IC04,05	IJJ-NJM4558DX	IC, NJM4558D
Q01	TNN-2SK49--F2	TR 2SK49 F2, H
Q02	TKK-2SC535--B	TR 2SC535 B, C
Q03,04	203 5 5500 93040	TR 2SC930 D, E
Q06,07	203 5 5251 57160	TR 2SC1571 F, G
Q08	203 5 6510 04160	TR 2SK41 F
Q09	203 5 5000 53660	TR 2SC536 F, G
Q11	203 5 5251 57180	TR 2SC1571 H
Q12	203 5 5000 53660	TR 2SC536 F, G
Q13	203 5 7230 60860	TR 2SA608 F, G
Q14	203 5 7252 27460	TR 2SC2274 F
Q15,16 17,18,19,20,21,22	203 5 5000 53660	TR 2SC536 F, G
	RESISTORS	
R01	R2EDZJ680APA	Carbon 68 1/4W ±5%
R02	R2HXBJ101A	Oxide Metal Film 100 1/2W ±5%
R03	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R04	R2EDZJ223APA	Carbon 22k 1/4W ±5%
R05	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R07	R2EDUJ4R7A	Carbon 4.7 1/4W ±5%
R08	R2EDUJ103A	Carbon 10k 1/4W ±5%
R09	R2EDUJ222A	Carbon 2.2k 1/4W ±5%
R10	R2EDUJ103A	Carbon 10k 1/4W ±5%
R11	R2EDZJ122APA	Carbon 1.2k 1/4W ±5%
R12	R2EDZJ100APA	Carbon 10 1/4W ±5%
R13	R2HXBJ101A	Oxide Metal Film 100 1/2W ±5%
R14	R2EDZJ391APA	Carbon 390 1/4W ±5%
R15	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R16	R2EDZJ471APA	Carbon 470 1/4W ±5%
R17	R2EDZJ122APA	Carbon 1.2k 1/4W ±5%
R18	R2EDZJ331APA	Carbon 330 1/4W ±5%
R19	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R20	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R21	R2EDZJ474APA	Carbon 470k 1/4W ±5%
R22	R2EDZJ223APA	Carbon 22k 1/4W ±5%
R23	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R25	R2EDZJ562APA	Carbon 5.6k 1/4W ±5%
R26	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R27	R2EDZJ822APA	Carbon 8.2k 1/4W ±5%
R30	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R31	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R32	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R33	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R34	R2HXBJ220A	Oxide Metal Film 22 1/2W ±5%
R37	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
R38	R2EDZJ822APA	Carbon 8.2k 1/4W ±5%
R39	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R40	R2HXBJ680A	Oxide Metal Film 68 1/2W ±5%
R41,42	R2EDZJ562APA	Carbon 5.6k 1/4W ±5%
R43,44	R2EDZJ274APA	Carbon 270k 1/4W ±5%

Ref. No.	Parts Number	Description
	RESISTORS	
R45,46	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R47,48	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R51,52	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
R53,54	R2EDZJ561APA	Carbon 560 1/4W ±5%
R55,56	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
R57,58	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R59	R2EDZJ101APA	Carbon 100 1/4W ±5%
R60	R2EDZJ155APA	Carbon 1.5M 1/4W ±5%
R61	R2EDZJ824APA	Carbon 820k 1/4W ±5%
R62	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R63	R2HXBJ680A	Oxide Metal Film 68 1/2W ±5%
R64	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R65	R2EDZJ331APA	Carbon 330 1/4W ±5%
R66	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R67	R2EDZJ152APA	Carbon 1.5k 1/4W ±5%
R68	R2EDZJ153APA	Carbon 15k 1/4W ±5%
R69	R2HXBJ101A	Oxide Metal Film 100 1/2W ±5%
R70	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R71,72	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R73	R2EDZJ272APA	Carbon 2.7k 1/4W ±5%
R74	R2EDZJ154APA	Carbon 150k 1/4W ±5%
R75	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R76	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
R77	R2EDZJ122APA	Carbon 1.2k 1/4W ±5%
R78	R2EDZJ104APA	Carbon 100k 1/4W ±5%
R79	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R80	R2HXBJ101A	Oxide Metal Film 100 1/2W ±5%
R81	R2EDZJ561APA	Carbon 560 1/4W ±5%
R82	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R83	R2EDZJ471APA	Carbon 470 1/4W ±5%
R84	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R85	R2EDZJ391APA	Carbon 390 1/4W ±5%
R86	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R87	R2EDZJ331APA	Carbon 330 1/4W ±5%
R88	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R89	R2EDZJ271APA	Carbon 270 1/4W ±5%
R90	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R91	R2EDZJ474APA	Carbon 470k 1/4W ±5%
R92	R2EDZJ824APA	Carbon 820k 1/4W ±5%
R93	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R94	R2EDZJ474APA	Carbon 470k 1/4W ±5%
R95	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R96	R2EDZJ331APA	Carbon 330 1/4W ±5%
R97	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R98	R2EDZJ154APA	Carbon 150k 1/4W ±5%
R99	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R100	R2EDZJ184APA	Carbon 180k 1/4W ±5%
R101	R2EDZJ474APA	Carbon 470k 1/4W ±5%
R102	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R103,104 107	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R108,109	R2EDZJ822APA	Carbon 8.2k 1/4W ±5%
R110,111	R2EDZJ392APA	Carbon 3.9k 1/4W ±5%
R112,113	R2EDZJ271APA	Carbon 270 1/4W ±5%
R114,115	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R116,117	R2EDZJ331APA	Carbon 330 1/4W ±5%
R118,119	R2EDZJ224APA	Carbon 220k 1/4W ±5%
R120,121	R2EDZJ153APA	Carbon 15k 1/4W ±5%

PARTS LIST (Continued)

Ref. No.	Parts Number	Description			
	RESISTORS				
R122,123	R2EDUJ104A	Carbon	100k	1/4W	±5%
R124,125	R2EDZJ103APA	Carbon	10k	1/4W	±5%
R126,127	R2EDZJ823APA	Carbon	82k	1/4W	±5%
R128,129	R2EDZJ182APA	Carbon	1.8k	1/4W	±5%
R130,131	R2EDZJ561APA	Carbon	560	1/4W	±5%
R132,133	R2EDZJ122APA	Carbon	1.2k	1/4W	±5%
R135,136	R2EDZJ332APA	Carbon	3.3k	1/4W	±5%
R137,138	R2EDZJ821APA	Carbon	820	1/4W	±5%
R139	R2EDZJ332APA	Carbon	3.3k	1/4W	±5%
R140	R2EDZJ103APA	Carbon	10k	1/4W	±5%
R141	R2EDZJ472APA	Carbon	4.7k	1/4W	±5%
R142	R2EDZJ331APA	Carbon	330	1/4W	±5%
R143	R2EDUJ124A	Carbon	120k	1/4W	±5%

VOLUME P.C.B. Assy
131 0 4001 06590

Ref. No.	Parts Number	Description
	4 2222 02050	VR 200k-Wx1, 100k-Bx2

MUTING P.C.B. Assy
131 0 4001 06580

Ref. No.	Parts Number	Description
	4 2352 00810	Socket 9P
	CAPACITORS	
C01,02 03	C1ERY-106APA	Electrolytic 10 μF 25V
C04	C1ERY-476APA	Electrolytic 47 μF 25V
C05	C1HYYZ473APA	Ceramic 0.047 μF 50V +80,–20%
	SEMICONDUCTORS	
D01,02 03,04 05,06	205 5 9040 44210	Diode, DS-442
D07	DNN-RD5R6EB	Diode, RD5.6EB
Q01,02 03,04	203 5 5000 53660	TR 2SC536F, G
	RESISTORS	
R01	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R02	R2EDZJ273APA	Carbon 27k 1/4W ±5%
R03	R2EDZJ561APA	Carbon 560 1/4W ±5%
R04	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R05	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R06,07	R2EDZJ102APA	Carbon 1k 1/4W ±5%

ANTENNA P.C.B. Assy
131 0 4001 06120

Ref. No.	Parts Number	Description
	4 2372 00770	SP Terminal 4P
	4 2599 20300	Balun

Ref. No.	Parts Number	Description			
	CAPACITORS				
C01,02 03	C1HYYZ473APA	Ceramic 0.047 μF		50V	+80,–20%
C04	C1HCYK470APA	Ceramic	47 pF	50V	±10%
	SEMICONDUCTORS				
Q01	203 5 6510 04160	TR 2SK41F			
	RESISTORS				
R01	R2HCPK222A	Solid	2.2k	1/2W	±10%
R02	R2EDZJ103APA	Carbon	10k	1/4W	±5%
R03	R2EDZJ155APA	Carbon	1.5M	1/4W	±5%
R04	R2EDZJ824APA	Carbon	820k	1/4W	±5%
R05	R2EDZJ472APA	Carbon	4.7k	1/4W	±5%
R06	R2EDUJ222A	Carbon	2.2k	1/4W	±5%
R07	R2EDUJ682A	Carbon	6.8k	1/4W	±5%

DIN P.C.B. Assy
131 0 4001 06130

Ref. No.	Parts Number	Description
	4 2352 00370	DIN 5P
	RESISTORS	
R01,02	R2EDZJ334APA	Carbon 330k 1/4W ±5%

L.E.D. SIGNAL P.C.B. Assy
131 0 4001 06600

Ref. No.	Parts Number	Description
	SEMICONDUCTORS	
D01,02 03,04,05	DYY-SLR-54GG	Diode, SLR-54GG

L.E.D. POINTER P.C.B. Assy
131 0 4001 05501

Ref. No.	Parts Number	Description
	131 0 3001 19400	Pointer Assy
	SEMICONDUCTORS	
D01,02	DWW-LN210RP	Diode, LN210RP
D03	DWW-LN310GP	Diode, LN310GP

POWER AMP P.C.B. Assy
131 0 4001 06160

Ref. No.	Parts Number	Description
	4 2349 20580	Fuse 3.15 A
	CAPACITORS	
C01,02	C1HRY-105APA	Electrolytic 1 μF 50V
C03,04	C1HCZK151BPA	Ceramic 150 pF 50V ±10%

PARTS LIST (Continued)

Ref. No.	Parts Number	Description
	CAPACITORS	
C05,06	C1HCDC050SL	Ceramic 5 pF 50V ±0.25%
C07,08	C1HRY-476APA	Electrolytic 47 μF 50V
C09,10	C1ARY-107APA	Electrolytic 100 μF 10V
C11,12	C1HFYK473APA	Mylar 0.047 μF 50V ±10%
C13	C1HRY-476APA	Electrolytic 47 μF 50V
C14,15	C1HRE-107A	Electrolytic 100 μF 50V
C16	C1HCDK101SL	Ceramic 100 pF 50V ±10%
	SEMICONDUCTORS	
IC01	206 5 7330 46141	IC, STK-461SA
	RESISTORS	
R01,02	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R03,04	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R05,06	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R07,08	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
R09,10	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R11,12	R2EDZJ563APA	Carbon 56k 1/4W ±5%
R13,14	R2EDZJ392APA	Carbon 3.9k 1/4W ±5%
R15,16	4 2212 00140	Metallized Paper 0.15 2W
R17,18	R2EDZJ472APA	Carbon 4.7k 1/4W ±5%
R21,22	R2HXBJ100A	Oxide Metal Film 10 1/2W ±5%
R23	R2HZK101A	Fuse 100 1/2W ±10%

POWER SUPPLY P.C.B. Assy
131 0 4001 06171

Ref. No.	Parts Number	Description
	4 2322 00160	Relay
	4 2349 20580	Fuse 3.15 A
	4 2349 21320	Fuse 250 mA
	4 2372 00950	Terminal 4P
	CAPACITORS	
C01,02	4 2232 00480	Electrolytic 4700 μF 35V
C03,04	C1ERE-108A	Electrolytic 1000 μF 25V
C05,06 07,08	4 2232 00430	Ceramic 0.01 μFx2 250V
C09	C1ERE-477A	Electrolytic 470 μF 25V
C10	C1ERE-227A	Electrolytic 200 μF 25V
C11	C1CRY-107APA	Electrolytic 100 μF 16V
C12	C1ERE-227A	Electrolytic 220 μF 25V
C13	C1VRE-227A	Electrolytic 220 μF 35V
C14	C1ARY-227APA	Electrolytic 220 μF 10V
	SEMICONDUCTORS	
D01	202 5 2570 02015	Diode, DBA 20C-K15
D02,03	DNN-RD15EB3	Diode, RD15EB3
D04	DNN-RD9R1EB	Diode, RD9.1EB
D05	DNN-RD16EB	Diode, RD16EB
D06,07 08,09 10,11	202 5 2470 13540	Diode, DS135D
D12	205 5 9040 44210	Diode, DS-442
Q01	203 5 8620 32550	TR 2SD325 E, F
Q02	203 5 5000 53660	TR 2SC536 F, G
Q03	203 5 7252 27450	TR 2SC2274 E, F

Ref. No.	Parts Number	Description
	RESISTORS	
R01,02	R3AXBJ821A	Oxide Metal Film 820 1W ±5%
R03	R3AXBJ101A	Oxide Metal Film 100 1W ±5%
R04	R2HXBJ221A	Oxide Metal Film 220 1/2W ±5%
R05	R2HXBJ101A	Oxide Metal Film 100 1/2W ±5%
R06	R2HZPK390A	Fuse 39 1/2W ±10%
R07,08 09	R2HXBJ271A	Oxide Metal Film 270 1/2W ±5%
R10	R2EDZJ471APA	Carbon 470 1/4W ±5%
R11	R2HXBJ101A	Oxide Metal Film 100 1/2W ±5%
R12	R2HZPK560A	Fuse 56 1/2W ±10%
R13	R2EDZJ124APA	Carbon 120k 1/4W ±5%
R14	R2EDZJ333APA	Carbon 33k 1/4W ±5%

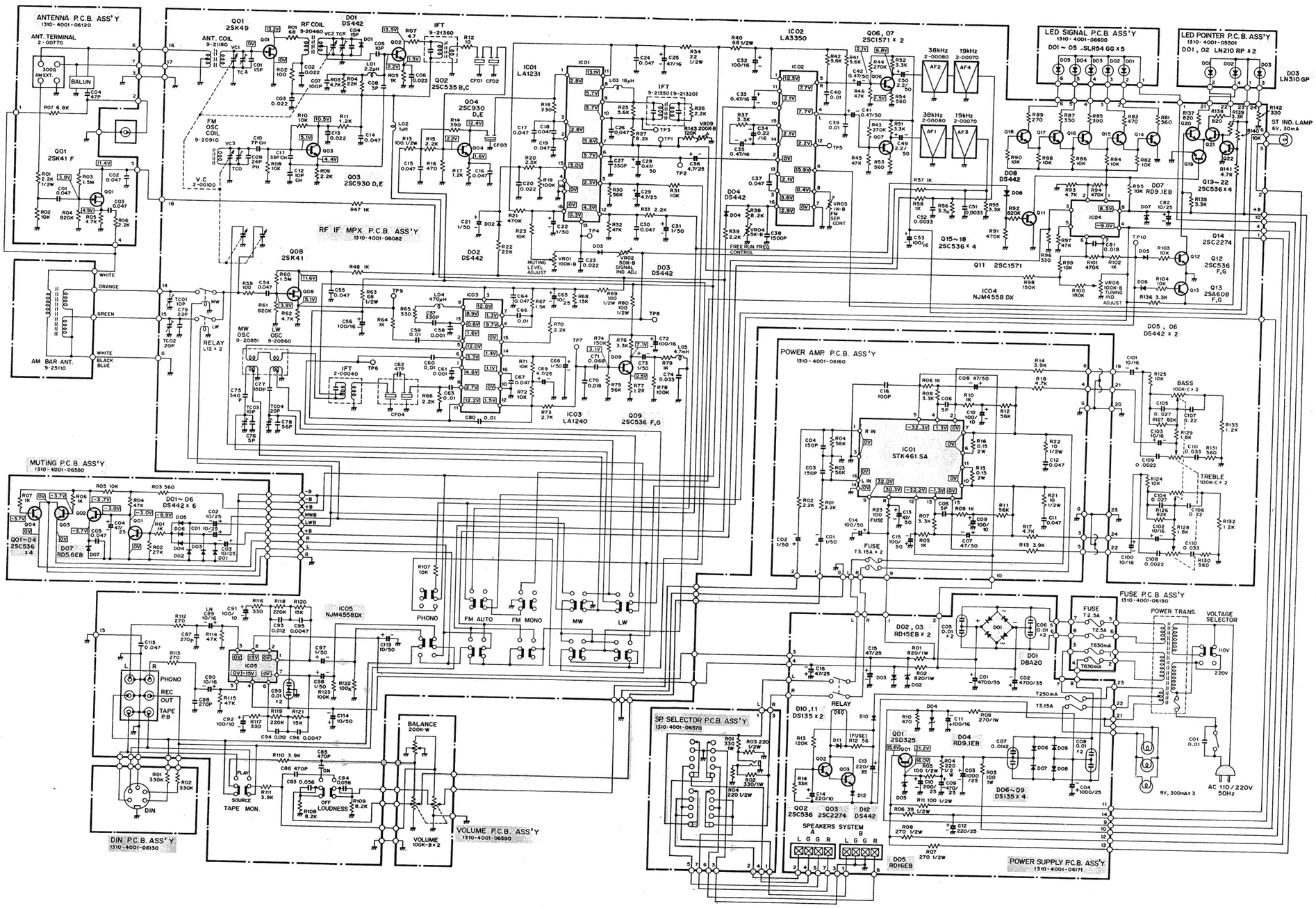
SPEAKER SELECTOR P.C.B. Assy
131 0 4001 06570

Ref. No.	Parts Number	Description
	4 2312 05020	Switch Rotary
	4 2352 00190	Microphone Jack 3P
	RESISTORS	
R01,02	R3AXBJ331A	Oxide Metal Film 330 1W ±5%
R03,04	R2HXBJ221A	Oxide Metal Film 220 1/2W ±5%

FUSE P.C.B. Assy
131 0 4001 06190

Ref. No.	Parts Number	Description
	4 2349 20400	Fuse 630 mA
	4 2349 20570	Fuse 2.5 AT

SCHEMATIC DIAGRAM

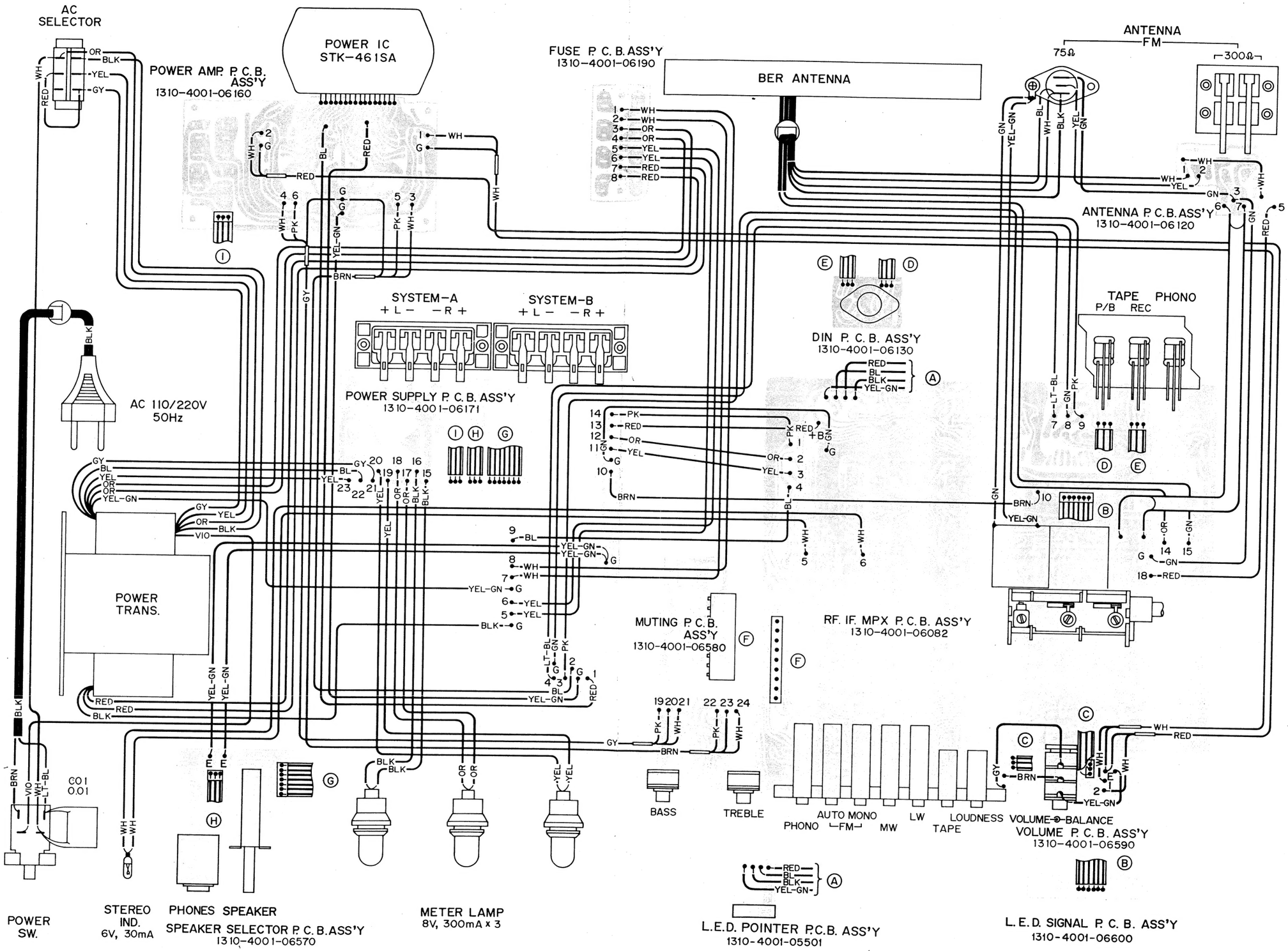


NOTES:

1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10% with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50Hz
4. This is a basic schematic diagram.

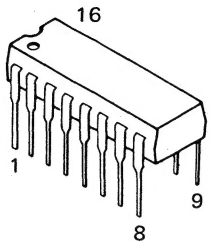
Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

POINT TO POINT WIRING DIAGRAM

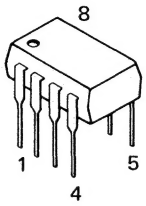


SEMICONDUCTOR LEAD IDENTIFICATION

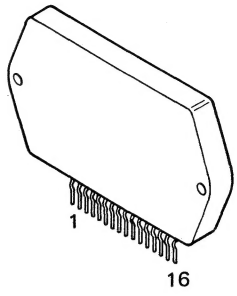
INTEGRATED CIRCUITS



- LA1231
- LA3350
- LA1240

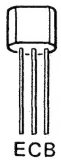


- NJM4558

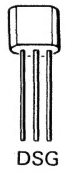


- STK-461

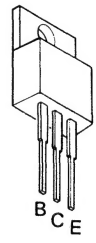
TRANSISTORS



- 2SA608
- 2SC535
- 2SC536
- 2SC930
- 2SC1571
- 2SC2274

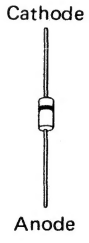


- 2SK41
- 2SK49

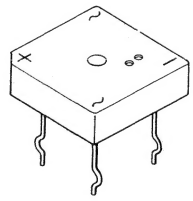


- 2SD325

DIODES



- DS135
- DS442
- RD5.6E
- RD9.1E
- RD15E
- RD16E



- DBA-20C